

PATENT
Docket No. 99556466

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

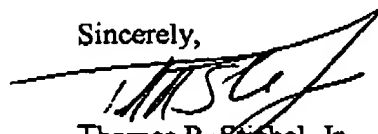
In re U.S. Patent Application of:)
)
 Racette *et al.*)
) Examiner: G. E. Winter
 Serial No.: 09/686,733)
) Group Art Unit: 1746
 Filed: October 11, 2001)
)
 For: CLEANING SYSTEM UTILIZING)
 AN ORGANIC CLEANING)
 SOLVENT AND A PRESSURIZED)
 FLUID SOLVENT)
)

Examiner Winter,

Attached is a draft amendment for your review before the telephonic interview scheduled for 2:00 P.M. CDT, Friday, May 9, 2003. There will be three people from this end attending the interview, (1) Timothy Racette (inventor), (2) James Schulte (inventor), and (3) myself, Thomas R. Stiebel, Jr. (attorney of record).

e

Sincerely,



Thomas R. Stiebel, Jr.
Reg. No. 48,682

Dated: May 7, 2003

PLEASE HAND DELIVER TO EXAMINER WINTER

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MESSAGE

TO > Examiner Gentle Winter

MESSAGE

FROM Thomas StiebelFIRM
NAMEUSPTOPHONE (312) 701-8755FAX
NUMBER(703) 746-7746NUMBER
OF PAGES18ALL PAGES MUST BE
CONSECUTIVELY NUMBERED

SPECIAL INSTRUCTIONS

Please hand deliver To Examiner Winter

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DRAFT AMENDMENT FOR INTERVIEW WITH EXAMINER

Assistant Commissioner of Patents
Washington, D. C. 20231

Dear Sir:

Applicants respectfully submits the following Draft Amendment for discussion with the Examiner.

I. Substitution of Claims

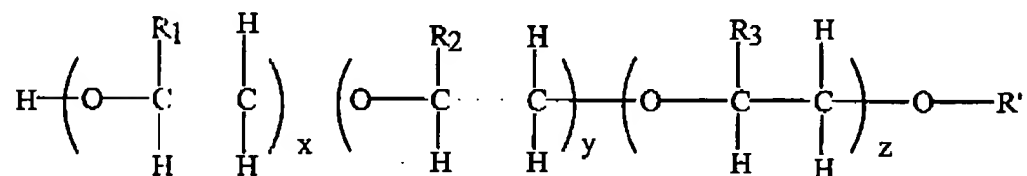
Please substitute the below pending claims with the corresponding amended claims, as shown below:

1. (Amended three times) A process for cleaning substrates comprising:
cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and
removing the organic solvent from the substrates using a pressurized fluid solvent;

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U.S. Patent Application Serial No. 09/686,773

wherein the organic solvent is of the structural formula:



wherein x, y, and z each is zero or one;

at least one of x, y, and z is one;

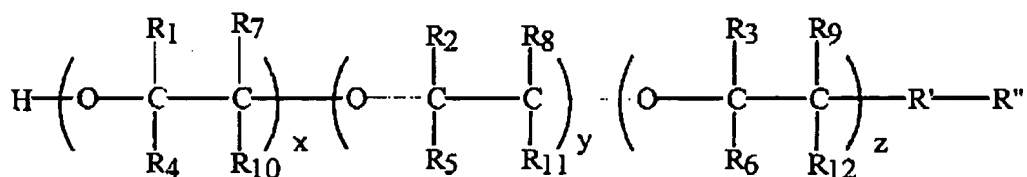
R' is C_jH_{2j+1} wherein j is an integer between one and (13-3(x+y+z)), inclusive; and

R_{1,3} are independently H or CH₃;

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

2. (Amended three times) A process for cleaning substrates comprising:

cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and removing the organic solvent from the substrates using a pressurized fluid solvent; wherein the organic solvent is of the structural formula:



wherein x, y, and z each is zero or one;

at least one of x, y, and z is one;

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R'' is benzyl, phenyl, partially or fully fluorinated benzyl or phenyl, C_jH_{2j+1} , or $C_jH_aF_b$

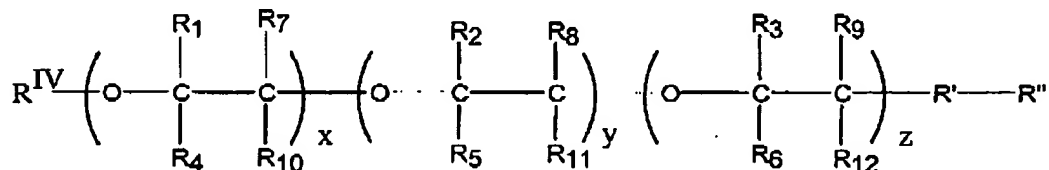
wherein j is an integer between one and $(13-3(x+y+z))$, inclusive, a and b each is independently an integer between zero and $2j+1$, inclusive, and $a+b=2j+1$;

R₁₋₁₂ are independently $C_mH_nF_p$ or $C_dH_eF_g$ where m is an integer between zero and two, inclusive, n and p are integers between zero and five, inclusive and $n+p=2m+1$, d is an integer between zero and two, inclusive, e and g are integers between zero and five, inclusive, and $e+g=2d+1$; and

R' is O, S, carbonyl or ester;

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

33. (Amended three times) A process for cleaning substrates comprising:
cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and
removing the organic solvent from the substrates using a pressurized fluid solvent;
wherein the organic solvent is of the structural formula:



wherein x, y, and z each is zero or one;

at least one of x, y, and z is one;

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R'' is C_jH_{2j-1} or $C_jH_uF_v$ and R^{IV} is C_kH_{2k+1} or $C_kH_rF_s$ wherein j and k are each an integer between one and $(13-3(x+y+z))$, inclusive, and $j+k$ is an integer between two and $(13-3(x+y+z))$, inclusive, u and v are each an integer between zero and $2j+1$, inclusive, and $u+v=2j+1$, and r and s are each an integer between zero and $2k+1$, inclusive, and $r+s=2k+1$, and if k equals zero, then s equals zero;

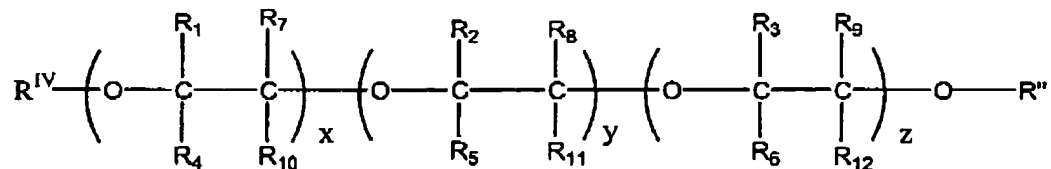
R_{1-3} and R_{10-12} are independently $C_mH_nF_p$, where m is an integer between zero and two, inclusive, n and p are integers between zero and five, inclusive and $n+p=2m+1$;

R_{4-9} are independently H, F or CH_3 ; and

R' is O, S, carbonyl or ester, and if R' is O or S and j equals zero then v equals zero;

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

50. (Amended three times) A process for cleaning substrates comprising:
cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and
removing the organic solvent from the substrates using a pressurized fluid solvent;
wherein the organic solvent is of the structural formula:



wherein x , y , and z are each zero or one;

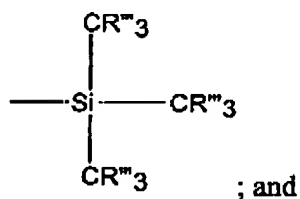
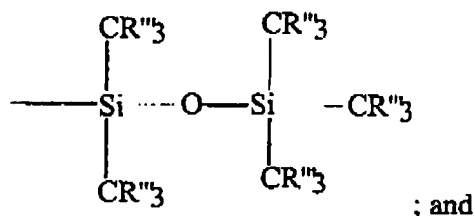
DRAFT AMENDMENT FOR INTERVIEW WITH EXAMINER

U.S. Patent Application Serial No. 09/686,773

at least one of x, y, and z is one;

R'' is selected from the group consisting of:

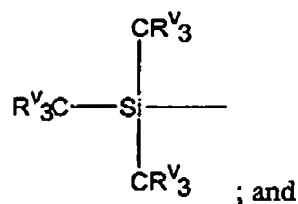
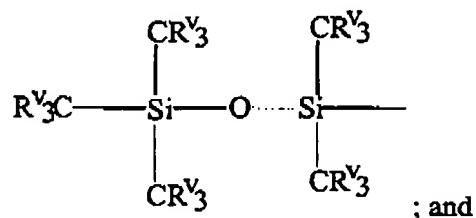
H;



wherein R''' is H, F or combinations of H and F;

R^{IV} is selected from the group consisting of:

H;



wherein R^v is H, F or combinations of H and F; and

when R'' is H or F, R^{IV} is not H or F;

R₁₋₃ are independently H, F, CH₃, CH₂F, CHF₂ or CF₃; and

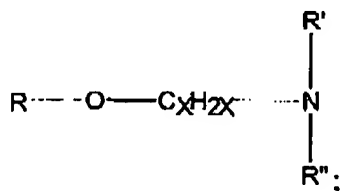
R₄₋₁₂ are independently H or F;

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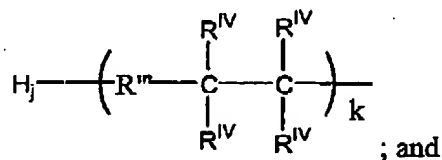
U.S. Patent Application Serial No. 09/686,773

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

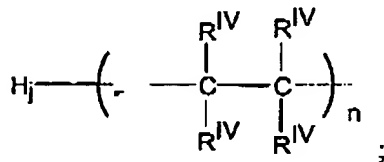
57. (Amended three times) A process for cleaning substrates comprising:
cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and
removing the organic solvent from the substrates using a pressurized fluid solvent;
wherein the organic solvent is of the structural formula:



wherein R' is



R'' is independently



wherein R''' is O and j is 1 or R''' is N and j is 2;

n is an integer between zero and two;

R^{IV} are each independently H, CH₃ or CH₂CH₃ and k is an integer between zero and two inclusive; and

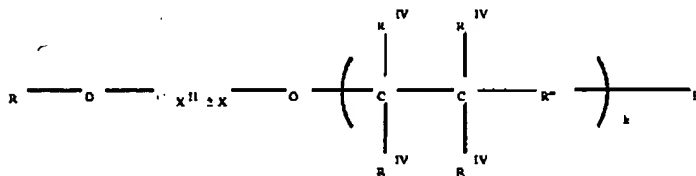
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wherein R is C_yH_{2y+1} and y is an integer between one and $(12 - (3k + 3n + x))$ inclusive,
and x is an integer between one and $(12 - (3k + y))$, inclusive;

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

58. (Amended three times) A process for cleaning substrates comprising:
cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and
removing the organic solvent from the substrates using a pressurized fluid solvent;
wherein the organic solvent is of the structural formula:



wherein R'' is O or NH;

R^{IV} are each independently H, CH_3 or CH_2CH_3 and k is an integer between zero and two inclusive; and

wherein R is C_yH_{2y+1} and y is an integer between one and $(12 - (3k + x))$ inclusive, and x is an integer between one and $(12 - (3k + y))$, inclusive;

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wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

II. Addition of Claims

Please add the following claims:

59. (New) The process of any of claims 1-58, further comprising removing a portion of the contaminant from the organic solvent.

60. (New) The process of any of claims 1-58, wherein the organic solvent contains 7 or more carbon atoms.

61. (New) The process of any of claims 1-58, wherein the substrate is a textile.

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REMARKS

Applicant respectfully submits that no new matter has been added by this amendment. Support in the specification for the new and amended claims can be found in the specification at least on the following:

Support for amended claims 1, 2, 33, 50, 57, and 58, can be found at least on page 28, lines 17-21; and on page 22, lines 15-18

Support for new claim 59 can be found at least on page 28, lines 14-16.

Support for new claim 60 can be found at least on page 11, line 9, to page 21, line 14.

Support for new claim 61 can be found at least on page 8, lines 9-19.

CONCLUSION

It is respectfully requested, in view of the forgoing Amendments and Remarks, the allowance of pending claims 1-61.

Sincerely,

Dated:

Draft

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Version to Show Amendments to the Claims

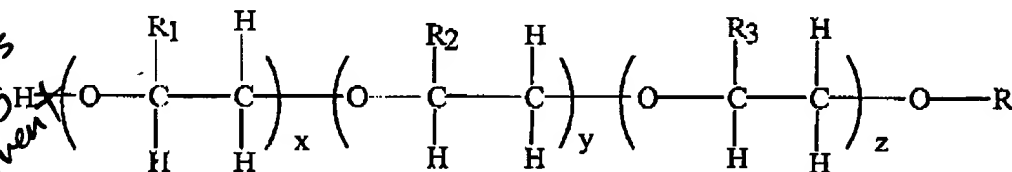
1. (Amended three times) A process for cleaning substrates comprising:

cleaning the substrates ^{fat is not a contaminant} by removing a contaminant with an organic solvent in absence of

liquid carbon dioxide, the organic solvent comprising less than 50% by weight water, and

removing the organic solvent from the substrates using a pressurized fluid solvent;

wherein the organic solvent is of the structural formula:



wherein x, y, and z each is zero or one;

at least one of x, y, and z is one;

R' is C_jH_{2j+1} wherein j is an integer between one and (13-3(x+y+z)), inclusive; and

R₁₋₃ are independently H or CH₃;

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

2. (Amended three times) A process for cleaning substrates comprising:

cleaning the substrates by removing a contaminant with an organic solvent in absence of

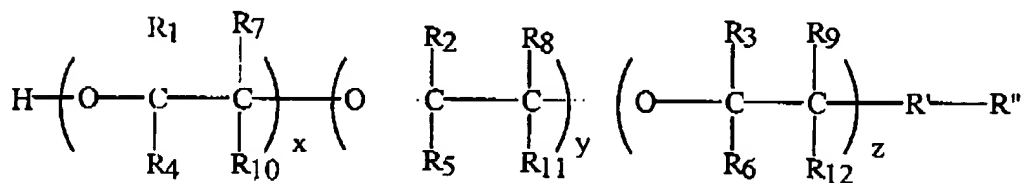
liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and

removing the organic solvent from the substrates using a pressurized fluid solvent;

wherein the organic solvent is of the structural formula:

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wherein x, y, and z each is zero or one;

at least one of x, y, and z is one;

R'' is benzyl, phenyl, partially or fully fluorinated benzyl or phenyl, C_jH_{2j+1}, or C_jH_aF_b

wherein j is an integer between one and (13-3(x+y+z)), inclusive, a and b each is independently an integer between zero and 2j+1, inclusive, and a+b=2j+1;

R₁₋₁₂ are independently C_mH_nF_p or C_dH_eF_g where m is an integer between zero and two, inclusive, n and p are integers between zero and five, inclusive and n+p=2m+1, d is an integer between zero and two, inclusive, e and g are integers between zero and five, inclusive, and e+g=2d+1; and

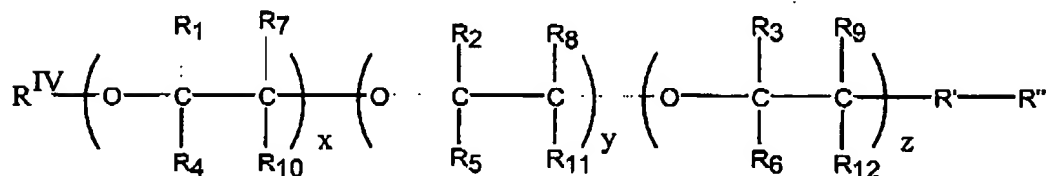
R' is O, S, carbonyl or ester;

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

33. (Amended three times) A process for cleaning substrates comprising:
- cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and
- removing the organic solvent from the substrates using a pressurized fluid solvent;
- wherein the organic solvent is of the structural formula:

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wherein x, y, and z each is zero or one;

at least one of x, y, and z is one;

R'' is C_jH_{2j+1} or $C_jH_uF_v$ and R^{IV} is C_kH_{2k+1} or $C_kH_rF_s$ wherein j and k are each an integer between one and $(13-3(x+y+z))$, inclusive, and $j+k$ is an integer between two and $(13-3(x+y+z))$, inclusive, u and v are each an integer between zero and $2j+1$, inclusive, and $u+v=2j+1$, and r and s are each an integer between zero and $2k+1$, inclusive, and $r+s=2k+1$, and if k equals zero, then s equals zero;

R_{1-3} and R_{10-12} are independently $C_mH_nF_p$, where m is an integer between zero and two, inclusive, n and p are integers between zero and five, inclusive and $n+p=2m+1$;

R_{4-9} are independently H, F or CH_3 ; and

R' is O, S, carbonyl or ester, and if R' is O or S and j equals zero then v equals zero;

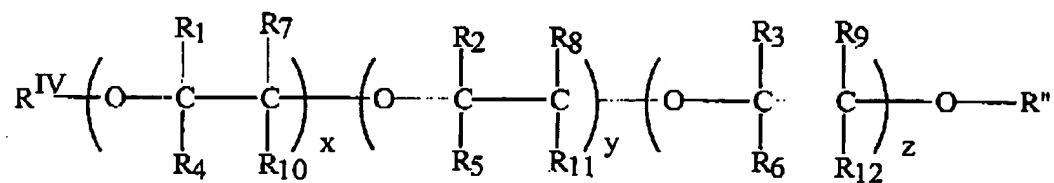
wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

50. (Amended three times) A process for cleaning substrates comprising:
- cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and
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wherein the organic solvent is of the structural formula:

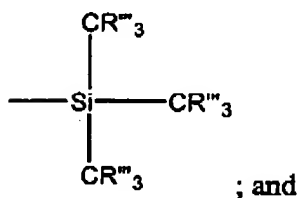
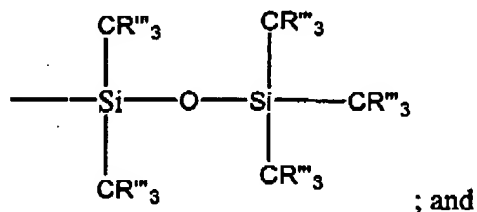


wherein x, y, and z are each zero or one;

at least one of x, y, and z is one;

R'' is selected from the group consisting of:

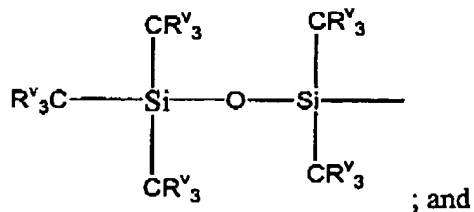
H;



wherein R''' is H, F or combinations of H and F;

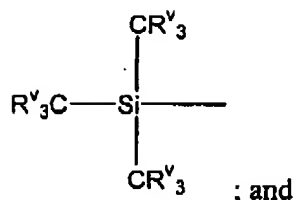
R^{IV} is selected from the group consisting of:

H;



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wherein R^{V} is H, F or combinations of H and F; and

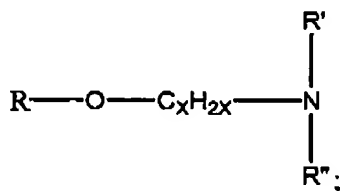
when R^{II} is H or F, R^{IV} is not H or F;

R_{1-3} are independently H, F, CH_3 , CH_2F , CHF_2 or CF_3 ; and

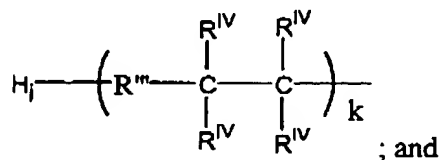
R_{4-12} are independently H or F;

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

57. (Amended three times) A process for cleaning substrates comprising:
 cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and
 removing the organic solvent from the substrates using a pressurized fluid solvent;
 wherein the organic solvent is of the structural formula:



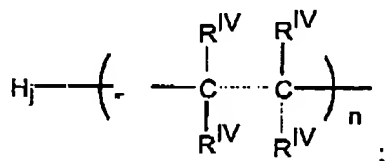
wherein R' is



DRAFT AMENDMENT FOR INTERVIEW WITH EXAMINER

U.S. Patent Application Serial No. 09/686,773

R'' is independently



wherein R''' is O and j is 1 or R''' is N and j is 2;

n is an integer between zero and two;

R^{IV} are each independently H, CH₃ or CH₂CH₃ and k is an integer between zero and two inclusive; and

wherein R is C_yH_{2y+1} and y is an integer between one and (12- (3k+3n+x)) inclusive,

and x is an integer between one and (12-(3k+y)), inclusive;

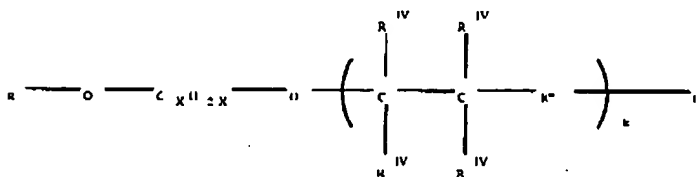
wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.

58. (Amended three times) A process for cleaning substrates comprising:

cleaning the substrates by removing a contaminant with an organic solvent in absence of liquid carbon dioxide, the organic solvent comprising less than 50% by weight water; and

removing the organic solvent from the substrates using a pressurized fluid solvent;

wherein the organic solvent is of the structural formula:



DRAFT AMENDMENT FOR INTERVIEW WITH EXAMINER

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wherein R''' is O or NH;

R^{IV} are each independently H, CH₃ or CH₂CH₃ and k is an integer between zero and two inclusive; and

wherein R is C_yH_{2y+1} and y is an integer between one and (12- (3k+x)) inclusive, and x is an integer between one and (12-(3k+y)), inclusive;

wherein when the pressurized fluid solvent is liquid carbon dioxide, the liquid carbon dioxide is under a pressure between approximately 600 pounds per square inch to approximately 1050 pounds per square inch.